Chemical/Biological Terrorism
June 2004

1: Am Fam Physician. 2004 Apr 15;69(8):1860; author reply 1860.
Comment on:
Am Fam Physician. 2003 May 1;67(9):1927-34.
Treatments for patients exposed to bioterrorism agents.
Campos-Outcalt D.
Publication Types: Comment Letter
PMID: 15117009 [PubMed - indexed for MEDLINE]

2: APA Newsl Philos Med. 2003 Spring;2(2):209-12.
Do healthcare professionals have an obligation to be vaccinated against smallpox?
May T, Silverman RD, Aulisio MP.
Medical College of Wisconsin, USA.
PMID: 15040338 [PubMed - indexed for MEDLINE]

3: Biotechniques. 2003 Oct;35(4):862-9.
Nucleic acid approaches for detection and identification of biological warfare and infectious disease agents.
Ivnitski D, O'Neil DJ, Gattuso A, Schlicht R, Calidonna M, Fisher R.
Institute for Engineering Research and Applications, New Mexico Institute of Mining and Technology, 901 University Blvd. SE, Albuquerque, NM 87106-4339, USA. ivnitski@nmt.edu
Biological warfare agents are the most problematic of the weapons of mass destruction and terror. Both civilian and military sources predict that over the next decade the threat from proliferation of these agents will increase significantly. In this review we summarize the state of the art in detection and identification of biological threat agents based on PCR technology with emphasis on the new technology of microarrays. The advantages and limitations of real-time PCR technology and a review of the literature as it applies to
pathogen and virus detection are presented. The paper covers a number of issues related to the challenges facing biological threat agent detection technologies and identifies critical components that must be overcome for the emergence of reliable PCR-based DNA technologies as bioterrorism countermeasures and for environmental applications. The review evaluates various system components developed for an integrated DNA microchip and the potential applications of the next generation of fully automated DNA analyzers with integrated sample preparation and biosensing elements. The article also reviews promising devices and technologies that are near to being, or have been, commercialized.
PMID: 14579752 [PubMed - indexed for MEDLINE]

4: Biotechniques. 2003 Oct;35(4):850-9.
Immunoassay of infectious agents.
Andreotti PE, Ludwig GV, Peruski AH, Tuite JJ, Morse SS, Peruski LF Jr.
ASD Biosystems, Richmond, VA, USA. pandreotti@csi.com
Immunoassays have evolved for a broad range of applications since the pioneering work of Yalow and Berson who developed the first competitive radioimmunoassay (RIA) for human insulin in 1959. Immunoassay detection of specific antigens and host-produced antibodies directed against such antigens consitutes one of the most widely used and successful methods for diagnosing infectious diseases (IDs). The number and variety of new assay systems that are continually being developed reflect the increasing demand for immunoassays possessing greater sensitivity, speed, and ease of use. This trend has been driven, in part, by the need for improved immunodiagnostic systems to perform rapid testing and counter emerging IDs and biothreat (BT) agents. Another factor driving this trend is the need to integrate immunoassays with more sensitive nucleic acid-based methods for a comprehensive approach. Here we examine the development of immunoassays, some of the key formats used for the detection and identification of BT/ID agents, and the application of these technologies under different scenarios.
PMID: 14579751 [PubMed - indexed for MEDLINE]

5: Biotechniques. 2003 Oct;35(4):840-6.
Rapid diagnostic assays in the genomic biology era: detection and identification of infectious disease and biological weapon agents.
Peruski LF Jr, Peruski AH.
Department of Microbiology and Immunology, Northwest Center for Medical Education, Indiana University School of Medicine, 3400 Broadway, Gary, IN 46408, USA. lperuski@iun.edu
In this special section of BioTechniques, we examine the role of rapid molecular technologies in the detection and identification of agents of infectious disease (ID) and biological weapons (BWs). Besides the threat posed by the global proliferation of BW technologies, there are numerous emerging and reemerging ID agents with significant public health consequences. Further compounding this already complicated situation are the estimated 600 million international tourists annually, many with the potential to the spread disease globally in a matter of hours. While clinical laboratories have key roles in the detection and identification of potential ID/BW agents, most staff are unfamiliar with these agents because of their rarity and the often laborious conventional methodologies needed to identify them. To meet this challenge, a vast array of rapid assay strategies has been developed for use in clinical diagnostics and environmental detection. Technologies have been developed or adapted to the challenges posed by these agents, permitting detection and identification in several minutes to hours. In particular, the development of improved reagents and detection systems has led to dramatic improvements in the sensitivity and specificity of immunological and nucleic acid-based systems, allowing an ever-increasing range of analytes to be identified and quantitated. In the accompanying articles, we have brought together experts from the many overlapping aspects of this arena in order to present a comprehensive and critical analysis of these technologies.
Publication Types: Review Review, Tutorial
PMID: 14579750 [PubMed - indexed for MEDLINE]

6: BMC Microbiol. 2004 May 17;4(1):21.

Multi-pathogens sequence containing plasmids as positive controls for universal detection of potential agents of bioterrorism.
Charrel RN, La Scola B, Raoult D.
Background The limited circulation of many of the agents that are likely to be used in a bioterrorism attack precludes the ready availability of positive controls. This means that only specialized laboratories can screen for the presence of these agents by nucleic amplification assays. Calibrated controls are also necessary for quantitative measurements. Primers and probes to be used in both conventional and real-time PCR assays were designed for the detection of agents likely to be used by a bioterrorist. Three plasmids, each of which contains 4 to 6 specific sequences from agents on the CDC Category A and B list (excluding RNA viruses) were constructed. Two plasmids incorporate the sequences of Category A and B agents, respectively. The third plasmid incorporates sequences from Variola major and organisms that cause rash-like illnesses that may be clinically confused with smallpox. An "exogenic sequence", introducing a
NotI restriction site was incorporated in the native sequences of the bioterrorism agents inserted in plasmids. The designed molecular system for detection of bioterrorism agents was tested on each of these agents (except Monkeypox virus, Smallpox virus and 2 Burkholderia species for which no native DNA was available) and a collection of 50 isolates of C. burnetii using constructed plasmids as positive controls. Results Designed primers and probes allowed molecular detection, in either single or multiplex assays, of
agent-specific targets with analytical sensitivities of between 1 and 100 DNA copies. The plasmids could be used as positive controls. False-positive results due to contamination by the positive control were easily detected by sequencing and eliminated by digestion with NotI. Conclusion Plasmid A and B can be used as positive controls in molecular assays for the detection of bioterrorism agents in clinical specimens or environmental samples. Plasmid C can be used as a positive control in differentiation of vesicular rashes. It is also possible to avoid or to ensure immediate detection of false positive results due to contamination by positive controls using these plasmids. These plasmids and the corresponding primers and probes are immediately available for all clinical microbiology laboratories provided they have molecular amplification equipment.
PMID: 15147587 [PubMed - as supplied by publisher]

7: BMC Public Health. 2003 Aug 11;3(1):26.
Risks of serious complications and death from smallpox vaccination: a systematic review of the United States experience, 1963-1968.
Aragon TJ, Ulrich S, Fernyak S, Rutherford GW.
Center for Infectious Disease Preparedness, School of Public Health, University of California, Berkeley, USA. aragon@ucbcidp.org
BACKGROUND: The United States (US) has re-instituted smallpox vaccinations to prepare for an intentional release of the smallpox virus into the civilian population. In an outbreak, people of all ages will be vaccinated. To prepare for the impact of large-scale ring and mass vaccinations, we conducted a systematic review of the complication and mortality risks of smallpox vaccination. We summarized these risks for post-vaccinial encephalitis, vaccinia necrosum (progressive vaccinia), eczema vaccinatum, generalized vaccinia, and accidental infection (inadvertant autoinoculation). METHODS: Using a MEDLINE search strategy, we identified 348 articles, of which seven studies met our
inclusion criteria (the number of primary vaccinations and re-vaccinations were reported, sufficient data were provided to calculate complication or case-fatality risks, and comparable case definitions were used). For each complication, we

estimated of the complication, death, and case-fatality risks. RESULTS: The life-threatening complications of post-vaccinial encephalitis and vaccinia necrosum were at least 3 and 1 per million primary vaccinations, respectively. Twenty-nine percent of vaccinees with post-vaccinial encephalitis died and 15% with vaccinia necrosum died. There were no deaths among vaccines that developed eczema vaccinatum; however, 2.3% of non-vaccinated contacts with eczema vaccinatum died. Among re-vaccinees, the risk of post-vaccinial encephalitis was reduced 26-fold, the risk of generalized vaccinia was reduced
29-fold, and the risk of eczema vaccinatum was reduced 12-fold. However, the risk reductions of accidental infection and vaccinia necrosum were modest (3.8 and 1.5 fold respectively).
Publication Types: Review Review, Academic
PMID: 12911836 [PubMed - indexed for MEDLINE]

8: Clin Chem. 2004 Jun;50(6):1060-2.
Molecular beacons for multiplex detection of four bacterial bioterrorism agents.
Varma-Basil M, El-Hajj H, Marras SA, Hazbon MH, Mann JM, Connell ND, Kramer FR, Alland D.
Department of Medicine, Division of Infectious Disease, New Jersey Medical School, The University of Medicine and Dentistry of New Jersey, Newark, NJ.
PMID: 15161722 [PubMed - in process]

9: Clin Immunol. 2004 Apr;111(1):1-15.
Vaccines for the prevention of diseases caused by potential bioweapons.
Hassani M, Patel MC, Pirofski LA.
Division of Infectious Diseases, Department of Medicine, Albert Einstein College of Medicine and Montefiore Medical Center Bronx NY, 10461 USA.
The development of vaccines and implementation of vaccination programs are among the most important medical contributions to humanity. To date, vaccination has reduced morbidity and mortality from infectious diseases more than any other specific medical intervention. The intentional use of bioweapons against civilians (bioterrorism), recently highlighted by events around the world, has fueled interest in the development of vaccines for potential microbial agents of bioterror. This review discusses the microbial agents that are considered to pose the greatest risk to the public, the diseases associated with them, and the vaccines that are available for their prevention. The paucity of such vaccines and uncertainty regarding mechanisms of vaccine efficacy and the microbial antigens that elicit protection underscore the need for continued study of
host-microbe interaction and the immune response to potential agents of bioterror for the development of new vaccines and immune-based therapies to combat their potential to harm the public.
Publication Types: Review Review, Tutorial
PMID: 15093546 [PubMed - indexed for MEDLINE]

10: Clin Med. 2004 Mar-Apr;4(2):161-4.
Bioterrorism: the need to be prepared.
World MJ.
Royal Centre for Defence Medicine, Selly Oak Hospital, Birmingham.
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Postal distribution of anthrax spores in October 2001 in the USA resulted in cases of pulmonary anthrax. In consequence, interest and concern about terrorist attacks on civilian populations using biological weapons have increased, particularly when one recent authoritative assessment suggested that an attack using some form of

unconventional weapon on a Western city was 'inevitable'. This article reviews the steps necessary to minimise the probability of a successful attack. Despite best endeavours, the possibility remains that significant numbers of casualties will arise, emphasising the need to plan for reception, triage, decontamination and treatment of patients. The medical Royal Colleges could assist the education of the wider medical community about aspects of pathology hitherto considered to be primarily military but which have now become important for civilian physicians.
PMID: 15139737 [PubMed - in process]

11: Commun Dis Public Health. 2004 Mar;7(1):68-72.
Surveillance of the bioterrorist threat: a primary care response.
Fleming DM, Barley MA, Chapman RS
Birmingham Research Unit, Royal College of General Practitioners, Lordswood House, 54 Lordswood Road, Harborne, Birmingham B17 9DB.
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Threats from bioterrorism are of national and international concern. We outline a system of disease surveillance covering a selection of diseases linked to potential bioterrorist threats, based on the weekly returns service of the Royal College of General Practitioners and covering a surveillance population of 650,000 in England and Wales. Practices record working diagnoses and the episode type (distinguishing new episodes of illness from ongoing consultations) on patients' computerised medical records. These are interrogated twice weekly by using automated routines. The registered population and persons consulting for each Read code (group of codes) are counted in sex and age specific groups and the data forwarded electronically to the Research Unit, where the results are consolidated by region (North, Central, South). Weekly incidence rates between October 2001 and September 2002 were compared with the weekly average over the past seven years for 13 selected conditions. Detailed data are presented for
three conditions (asthma, infections of the skin, disorders of the peripheral nervous system). For asthma increased incidence was reported in weeks 31 and 32 of 2002, predominantly in the Central region. For the other two conditions no unusual peaks of incidence were observed in any region. Operational research based on disciplined recording of morbidity in general practice can deliver timely surveillance data on bioterrorist threats.
PMID: 15137285 [PubMed - indexed for MEDLINE]

12: Drug Discov Today. 2004 Mar 1;9(5):205-6.
The development of antimicrobials and vaccines against bacterial bioterrorism agents--where are we?
Gilligan PH.
Publication Types: Letter
PMID: 14980537 [PubMed - indexed for MEDLINE]

13: ED Manag. 2004 May;16(5):54-5.
This surveillance system goes beyond bioterrorism.
[No authors listed]
Florida hospitals are benefiting in practical ways from a system originally designed to detect bioterrorism attacks. The system is proving useful in alerting emergency staff to naturally occurring infections early enough to take proactive action. The system is available to any interested ED. EDs can use the system to identify common maladies such as influenza in time to prepare for a community outbreak. Any ED in a large populated area may find the system useful.
PMID: 15139264 [PubMed - in process]

14: Emerg Infect Dis. 2004 Jan;10(1):117-20.
Erratum in: Emerg Infect Dis. 2004 Feb;10(2):385.
Bacillus anthracis incident, Kameido, Tokyo, 1993.
Takahashi H, Keim P, Kaufmann AF, Keys C, Smith KL, Taniguchi K, Inouye S, Kurata T.
National Institute of Infectious Diseases, Tokyo, Japan.
takahashimd@syd.odn.ne.jp
Publication Types: Historical ArticlePMID: 15112666
[PubMed - indexed for MEDLINE]
15: Emerg Infect Dis. 2004 Jan;10(1):100-8.
Evaluating detection and diagnostic decision support systems for bioterrorism response.
Bravata DM, Sundaram V, McDonald KM, Smith WM, Szeto H, Schleinitz MD, Owens DK.
University of California San Francisco-Stanford Evidence-based Practice Center, Stanford, California, USA. bravata@healthpolicy.stanford.edu
We evaluated the usefulness of detection systems and diagnostic decision support systems for bioterrorism response. We performed a systematic review by searching relevant databases (e.g., MEDLINE) and Web sites for reports of detection systems and diagnostic decision support systems that could be used during bioterrorism responses. We reviewed over 24,000 citations and identified 55 detection systems and 23 diagnostic decision support systems. Only 35 systems have been evaluated: 4 reported both sensitivity and specificity, 13 were compared to a reference standard, and 31 were evaluated for their timeliness. Most evaluations of detection systems and some evaluations of diagnostic systems for bioterrorism responses are critically deficient. Because false-positive and false-negative rates are unknown for most systems, decision making on the basis of these systems is seriously compromised. We describe a framework for the design of future evaluations of such systems.
Publication Types: Review Review, Academic
PMID: 15078604 [PubMed - indexed for MEDLINE]

16: Evid Rep Technol Assess (Summ). 2004 Apr;(96):1-7.
Regionalization of bioterrorism preparedness and response.
[No authors listed]
PMID: 15133889 [PubMed - indexed for MEDLINE]

17: Fed Regist. 2004 Jun 4;69(108):31659-705.
Administrative detention of food for human or animal consumption under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002.
Final rule.
Food and Drug Administration, HHS.
The Food and Drug Administration (FDA) is issuing a final regulation that provides procedures for the detention of an article of food, if an officer or qualified employee of FDA has credible evidence or information indicating that such article presents a threat of serious adverse health consequences or death to humans or animals ("administrative detention"). The final rule implements the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (the Bioterrorism Act), which authorizes the use of administrative detention and requires regulations establishing procedures for instituting on an expedited basis certain enforcement actions against perishable food subject to a detention order.

PMID: 15181899 [PubMed - in process]

18: Hum Res Rep. 2003 Aug;18(8):9.
Military personnel may have been human subjects without their informed consent.
Maloney DM.
The Deem Corporation, P.O. Box 44069, Omaha, NE 68144, USA.
Publication Types: Historical Article
PMID: 15119340 [PubMed - indexed for MEDLINE]

19: IDrugs. 2004 Feb;7(2):96-9.
Bioterrorism and emerging infectious disease - antimicrobials, therapeutics and immune-modulators. Viral infections.
de la Torre JC.
Scripps Research Institute, Department of Neuropharmacology, Division of Virology, IMM-6, 10550 N Torrey Pines Road, La Jolla, CA 92037, USA.
juanct@scripps.edu
Publication Types: Congresses
PMID: 15057646 [PubMed - indexed for MEDLINE]

20: IDrugs. 2004 Feb;7(2):91-5.
Bioterrorism and emerging infectious disease - antimicrobials, therapeutics and immune-modulators. SARS coronavirus.
Shurtleff AC.
US Army Medical Research Institute of Infectious Diseases, Virology Division, Fort Detrick, Frederick, MD 21702-5011, USA.
amy.shurtleff@det.amedd.army.mil
The purpose of this meeting was to provide a forum for expert presentations and discussion about the threats of bioterrorism and emerging infectious diseases, and to address the issues relating to epidemics, prevention of infection and treatment of some of these emerging infectious diseases classified as potential agents of bioterror. Included in the talks were state-of-the-art presentations about infectious clone technology and recombinant viruses, pathogen and receptor interactions at the cellular and molecular level, genomic responses to infection, and new information on antiviral mechanisms of action. Severe acute respiratory syndrome (SARS) and progress toward understanding the epidemic was addressed, and other sessions were presented concerning immune therapy and immunopotentiation of disease, siRNA and gene silencing, host responses to pathogen infections, as well as the use of genetic engineering to circumvent and
direct the immune response. Many discussions were held and data were presented about possible compounds and new drugs that may have antiviral properties, yet there were few discussions of any available new drugs. This report addresses reverse genetics of SARS virus, as well as its epidemiology, and a host of different recent approaches to developing antivirals effective against SARS, including some potential vaccine candidates. Also presented are hypotheses about the human immune response to SARS infection, as well as immune therapies against botulinum and anthrax toxins. This report also addresses antiviral approaches exploiting siRNAs, and different aspects of the host immune response to many of the different dangerous pathogens discussed at this meeting. Finally, approaches to circumventing and directing the immune response using genetic engineering will be reported.
Publication Types: Congresses
PMID: 15057645 [PubMed - indexed for MEDLINE]

21: IEEE Eng Med Biol Mag. 2004 Jan-Feb;23(1):119-21.
Technological challenges in counter bioterrorism.
Laxminarayan S, Stamm BH.
Institute of Rural Health, Idaho State University, Pocatello, ID, USA.
s.n.laxminarayan@ieee.org
PMID: 15154267 [PubMed - in process]

22: Infect Control Hosp Epidemiol. 2004 Feb;25(2):146-55.
Health system preparedness for bioterrorism: bringing the tabletop to the hospital.
Henning KJ, Brennan PJ, Hoegg C, O'Rourke E, Dyer BD, Grace TL.
Division of Infectious Diseases, Department of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, USA.
OBJECTIVE: To evaluate the acceptance and usefulness of a hospital-based tabletop bioterrorism exercise. DESIGN: A descriptive study of responses to a smallpox scenario delivered as a tabletop exercise in three modules. SETTING: A large, multi-institutional urban health system. PARTICIPANTS: Healthcare workers representing 16 hospital departments. RESULTS: Thirty-nine (78%) of 50 invited employees from 4 hospitals participated. Key responses highlighted the importance of pre-event planning in intra-departmental communication, identification of resources for the dependents of healthcare workers, clarification of the chain of command within the hospital, establishment of a link to key governmental agencies, and advanced identification of negative pressure rooms for cohorting large numbers of patients. Almost one-fourth of the participants described their hospital department as poorly prepared for a
bioterrorism event of moderate size. At the conclusion of the tabletop, 79% of the participants stated that the exercise had increased their knowledge of preplanning activities. Seventy-nine percent of all participants, 94% of physicians and nurses, and 95% of participants from non-university hospitals ranked the exercise as extremely or very useful. The exercise was completed in 3 1/2 hours and its total direct cost (excluding lost time from work) was 225 dollars (U.S.). CONCLUSIONS: Tabletop exercises are a feasible, well-accepted modality for hospital bioterrorism preparedness training. Hospital employees, including physicians and nurses, rank this method as highly useful for guiding preplanning activities. Infection control staff and hospital epidemiologists should play a lead role in hospital preparedness activities. Further assessment of the optimal duration, type, and frequency of tabletop exercises is needed.
PMID: 14994941 [PubMed - indexed for MEDLINE]

23: Int J Cardiol. 2004 Feb;93(2-3):157-62.
Impact of the Gulf war on congenital heart diseases in Kuwait.
Abushaban L, Al-Hay A, Uthaman B, Salama A, Selvan J.
Cardiology Department, The Chest Hospital, Kuwait City, 13041 Safat, Kuwait.
lulu@hsc.kuniv.edu.kw
BACKGROUND: There has been concern over the increase in the number of babies born with congenital heart diseases (CHD) in Kuwait after the Gulf War. METHODS: We evaluated retrospectively the number of Kuwaiti infants who were diagnosed to have CHD within the first year of life. The comparison was made between those presented from January 1986 to December 1989 (preinvasion) and those presented after the liberation of Kuwait (from January 1992 to December 2000).The number of cases was considered per 10,000 live births in that year. RESULTS: The numbers of

cases were 2704 (326 before the invasion and 2378 after liberation). The mean annual incidence of CHD was 39.5 and 103.4 (per 10,000 live births) before and after the Gulf War, respectively (P<0.001). There was an increase in the number of babies with CHD during the immediate 3 years postliberation with a relative reduction in the trend from 1995 to 2000, in some types of CHD. CONCLUSIONS: In our series, there was an increased incidence of CHD almost immediately following the end of the Gulf War period. The cause of this increase remains relatively obscure. Environmental pollution may be a contributing factor; others such as possible psychological trauma remain subject to
speculation.
PMID: 14975541 [PubMed - indexed for MEDLINE]

24: Int J Environ Health Res. 2004 Feb;14(1):31-41.
How clean is clean enough? Recent developments in response to threats posed by chemical and biological warfare agents.
Raber E, Carlsen T, Folks K, Kirvel R, Daniels J, Bogen K.
Environmental Protection Department, Energy and Environment Directorate, University of California, Lawrence Livermore National Laboratory, Livermore, CA, USA. raber1@llnl.gov
Recent terrorist events underscore the urgent need to develop a comprehensive set of health-protective cleanup standards and effective decontamination technologies for use in the restoration of civilian facilities. Accurate scientific information remains limited in the area of biological warfare agents. However, new guidelines and calculated cleanup values are emerging for initial re-entry and long-term reoccupation following use of chemical warfare agents. This article addresses airborne, soil, and surface exposures following release of G-type chemical warfare agents and VX. Cleanup goals should be tailored to the type of population that may be exposed, potential exposure times, and other scenario-specific considerations. Three different airborne concentrations are
proposed for cleanup of public sector facilities. One value is recommended for initial re-entry; a more conservative value is recommended for long-term monitoring and increased public confidence; and a third, even more conservative concentration represents essentially a no-effect level for round-the-clock airborne exposure. Health-based cleanup levels are provided for contaminated residential and industrial soil. Results are presented on the outcome of a preliminary risk assessment to determine safe surface levels (e.g., walls, floors, and handrails) for cleanup after exposure to the G agents and VX. Because specific cleanup criteria for most biological warfare agents remain problematic, recommendations are made for filling the knowledge gaps.
Publication Types: Review Review, Tutorial
PMID: 14660116 [PubMed - indexed for MEDLINE]

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Tularemia in otolaryngology: a forgotten but not gone disease and a possible sign of bio-terrorism.
Rinaldo A, Bradley PJ, Ferlito A.
Publication Types: Editorial
PMID: 15117460 [PubMed - indexed for MEDLINE]

26: J Mol Graph Model. 2004 Jul;22(6):473-8.
Combating bioterrorism with personal computers.
Richards WG, Grant GH, Harrison KN.
Central Chemistry Laboratory, Department of Chemistry, University of Oxford, South Parks Road, Oxford OX1 3QH, UK.

Using personal computers in a grid is permitting the in silico screening of millions of molecules to seek out potential inhibitors of agents that pose bioterror threats. Current projects are targeting anthrax and smallpox, but the approach has many attractions for investigating any known protein target and its inhibition.
PMID: 15182806 [PubMed - in process]

27: J Nerv Ment Dis. 2004 Apr;192(4):318-23.
Reactions of psychiatric inpatients to the threat of biological and chemical warfare in Israel.
Strous RD, Ofir D, Brodsky O, Yakirevitch J, Drannikov A, Navo N, Kotler M.
Beer Yaakov Mental Health Center, Beer Yaakov, Israel.
In the months before the Second Gulf War, the threat of biological and chemical warfare led many Israelis to experience significant stress and mood changes. In this study, we investigated whether this threat affected the subjective mood and behavior of inpatients with schizophrenia and compared the results with effects noted in their clinical staff. Subjects were evaluated at two points in time-2 months before the war and on day 1 of the war-with a specially designed questionnaire and with the Spielberger Scale for Trait Anxiety. Although the responses of the two groups did not differ radically before the war, on the first day of war, significant differences were noted, with patients demonstrating increases in anxiety and level of concern. Both groups reported similar effects on their mood. Patients were more concerned about the potential for the outbreak of World War III, whereas staff were more concerned about economic effects. Female subjects in both groups demonstrated greater anxiety and mood changes after the outbreak of war compared with before the war. Effects observed on the patients may be related to the decreased coping threshold resulting from their illness, which renders psychotic patients more vulnerable to any acute stressor; however, effects on the staff members should not be ignored.
PMID: 15060407 [PubMed - indexed for MEDLINE]

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Status of Kansas emergency preparedness relating to public health.
[No authors listed]
PMID: 15079954 [PubMed - indexed for MEDLINE]

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USA lays out aggressive bioterrorism programme.
McCarthy M.
Publication Types: News
PMID: 15139336 [PubMed - indexed for MEDLINE]

30: Lancet Infect Dis. 2004 May;4(5):258.
USA establishes advisory board for "dual use" research.
Quirk M.
Publication Types: News
PMID: 15141699 [PubMed - indexed for MEDLINE]

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Technology and public health.
Larkin M.
MLEditor@aol.com
Publication Types: News
PMID: 15120351 [PubMed - indexed for MEDLINE]

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Comment on:
N Engl J Med. 2004 Feb 19;350(8):800-8.
Acute chemical emergencies.
Nogue-Xarau S, Duenas A, Burillo G.Publication Types: Comment Letter
PMID: 15146576 [PubMed - indexed for MEDLINE]

33: N Engl J Med. 2004 May 13;350(20):2102-4; author reply 2102-4.
Comment on:
N Engl J Med. 2004 Feb 19;350(8):800-8.
Acute chemical emergencies.
Newmark J, Hurst CG.
Publication Types: Comment Letter
PMID: 15141056 [PubMed - indexed for MEDLINE]

34: N S W Public Health Bull. 2003 Nov-Dec;14(11-12):221-3.
Laboratory investigation of suspected bioterrorism incidents, New South Wales, October 2001 to February 2002.
James G, Yuen M, Gilbert L.
Centre for Infectious Diseases and Microbiology, Institute of Clinical Pathology and Medical Research, Westmead.
PMID: 14981557 [PubMed - indexed for MEDLINE]

35: N S W Public Health Bull. 2003 Nov-Dec;14(11-12):218-21.
Anthrax and other suspect powders: initial responses to an outbreak of hoaxes and scares.
Leask A, Delpech V, McAnulty J.
New South Wales Public Health Officer Training Program, New South Wales Department of Health.
PMID: 14981556 [PubMed - indexed for MEDLINE]

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ELSI and bioterrorism countermeasures?
Green SK.
Publication Types: Letter
PMID: 15175678 [PubMed - in process]

37: Northwest Dent. 2004 Jan-Feb;83(1):43-4.
The one hundred year war: two down and 98 to go.
Nolting FW.
PMID: 15098302 [PubMed - indexed for MEDLINE]

38: Ohio Nurses Rev. 2003 Mar;78(3):4-6; quiz 8.
Smallpox: what every nurse should know.
Maier G.
PMID: 15134061 [PubMed - indexed for MEDLINE]

39: Prehospital Disaster Med. 2003 Jul-Sep;18(3):258-62.
Measures of effectiveness in large-scale bioterrorism events.
Burkle FM Jr.

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Measures of effectiveness (MOEs) are defined as operationally quantifiable management tools that provide a means for measuring effectiveness, outcome, and performance. No clear MOEs exist for determining success or failure of the management of a bioterrorism response. This is especially critical because management requires a multi-agency and multi-disciplinary decision-making and evaluation process. It is suggested that the minimum MOEs required to operationally measure outcome must contain a measuring response capacity for: (1) real-time public health surveillance system; (2) full coverage health information system; (3) capacity to measure variance across management timelines; (4) demonstrated decline in mortality and morbidity; (5) control of transmission rates of communicable agents; and (6) resource distribution across the entire population.
PMID: 15141867 [PubMed - indexed for MEDLINE]

40: Prehospital Disaster Med. 2003 Jul-Sep;18(3):208-16.
Future considerations for the medical management of nerve-agent intoxication.
Aas P.
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The use of chemical warfare agents against civilians and unprotected troops in international conflicts or by terrorists against civilians is considered to be a real threat, particularly following the terrorist attacks on 11 September 2001 against the World Trade Center in New York and against the Pentagon in Washington, DC. Over the past 10 years, terrorists have been planning to use or have used chemical warfare agents on several occasions around the world, and the attacks in 2001 illustrate their willingness to use any means of warfare to cause death and destruction among civilians. In spite of new international treaties with strong verification measures and with an aim to prohibit and prevent the use of weapons of mass destruction, nevertheless, some countries and
terrorist groups have been able to develop, produce, and use such weapons, particularly nerve agents, in domestic terrorist attacks or during warfare in international conflicts. This article reviews current medical therapy for nerve-agent intoxication and discusses possible future improvement of medical therapies. Present medical counter-measures against nerve agents are not sufficiently effective particularly in protecting the brain. Therefore, new and more effective countermeasures must be developed to enable better medical treatment of civilians and military personnel following exposure to nerve
agents. Therefore, it is important with an enhanced effort by all countries, to improve and increase research in medical countermeasures, in the development of protective equipment, and in carrying out regular training of medical and emergency personnel as well as of military nuclear, biological, or chemical (NBC) units. Only then will nations be able to reduce the risk from and prevent the use of such weapons of mass destruction (WMD).
Publication Types: Review Review, Tutorial
PMID: 15141860 [PubMed - indexed for MEDLINE]

41: Prehospital Disaster Med. 2003 Jul-Sep;18(3):179-83.
Aum Shinrikyo and the Japanese law on bioterrorism.
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Before the sarin incidents in Tokyo and Matsumoto, the Aum Shinrikyo (now Aleph) had tried to conduct bioterrorism with botulinum toxin and Bacillus anthracis.

Followers of the Aum could not overcome technical difficulties inherent in developing biological weapons, and the perpetrators had not been prosecuted for their failed attempts of bioterrorism. But the Aum's biological attack revealed several shortcomings in the Japanese law that regulated biological weapons. Since the missile experiment of North Korea conducted in 1998, the Japanese government has come to consider the threat posed by biological weapons more seriously. In 2001, after the 11 September 2001 terrorist attacks and the series of anthrax letter scares in the United States of America, the Japanese government established its Five Basic Principles for Chemical and Biological Weapons Terrorism and several measures were taken at the central and local levels. Activities of the Aum have been monitored by the Public Security Investigation Agency and the National Police Agency under the Anti-Aum Law since 2000.
PMID: 15141855 [PubMed - indexed for MEDLINE]

42: Proc Natl Acad Sci U S A. 2004 Apr 6;101 Suppl 1:5254-60. Epub 2004 Jan 06.
Traffic-based feedback on the web.
Aizen J, Huttenlocher D, Kleinberg J, Novak A.
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Usage data at a high-traffic web site can expose information about external events and surges in popularity that may not be accessible solely from analyses of content and link structure. We consider sites that are organized around a set of items available for purchase or download, consider, for example, an e-commerce site or collection of online research papers, and we study a simple indicator of collective user interest in an item, the batting average, defined as the fraction of visits to an item's description that result in an acquisition of that item. We develop a stochastic model for identifying points in time at which an item's batting average experiences significant change. In experiments with usage data from the Internet Archive, we find that such changes often occur in an abrupt, discrete fashion, and that these changes can be closely aligned with events such as the highlighting of an item on the site or the appearance of a link from an active external referrer. In this way, analyzing the dynamics of item popularity at an active web site can help characterize the impact of a range of events taking place both on and off the site.
PMID: 14709676 [PubMed - indexed for MEDLINE]

43: Public Health Rep. 2004 Jan-Feb;119(1):16-8.
Bioterrorism preparedness coordination: an ataxic saga continues.
Clements B, Evans RG.
Center for the Study of Bioterrorism, School of Public Health, St. Louis University, St. Louis, MO 63104, USA. clements@slu.edu
PMID: 15147643 [PubMed - indexed for MEDLINE]

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Ethical issues in modern biological technologies.
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Today's biology-based technologies have emerged from a historical imperative and as an inevitable consequence of developments in modern biology beginning in the last half-century. They can be classified into almost 30 different areas, ranging from the use of gene therapy for human beings, enzyme engineering, stem cells and cloning, to marine biotechnology, bioinformatics, nanotechnology and biological warfare among many others. Many of them have major sociopolitico-economic,

moral, ethical and legal implications. They include genetic engineering, gene therapy, tissue culture, stem cell work, the new DNA technologies, commercialization of traditional plant-based drug formulations, assisted reproduction techniques, cloning technologies, organ transplantation, bioinformatics, and biological weapons. Examples of the ethical implications of several of these items will be considered. They will be assessed with special reference to ethical implications in respect of assisted reproduction
techniques, of worldwide importance today, particularly for a country such as India
Publication Types: Review Review, Tutorial
PMID: 14653882 [PubMed - indexed for MEDLINE]

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Bioterrorism: an overview.
Peralta LA.
U.S. Army Medical Department Center and School, Fort Sam Houston, TX, USA.
How real is the threat of bioterrorism? Experts may disagree on the likelihood of use, but the possibility cannot be totally dismissed. Complacent ignorance of a low-probability, high-cost risk is dangerous and can result in devastating global consequences. This is a US government work. There are no restrictions on its use.
Publication Types: Review Review, Tutorial
PMID: 15129614 [PubMed - indexed for MEDLINE]

46: Toxicol Lett. 2004 Apr 1;149(1-3):11-8.
Chemical weapons: documented use and compounds on the horizon.
Bismuth C, Borron SW, Baud FJ, Barriot P.
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Man's inhumanity to man is expressed through a plethora of tools of modern warfare and terror. The use of chemical and biological weapons with the goals of assault, demoralisation and lethality has been documented in recent history, both on the battlefield and in urban terror against civilians. A general review of a few of the currently employed chemical weapons and biological toxins, along with a look at potential chemical weapons and tools of counter-terrorism, follows. While these weapons are fearsome elements, the dangers should be viewed in the context of the widespread availability and efficacy of conventional weapons.
Publication Types: Historical Article Review Review, Tutorial
PMID: 15093243 [PubMed - indexed for MEDLINE]